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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/400,140 03/06/95 JEFFREY

M BRAMMER65-US

26M1/0319

K1ZC UNIT PAPER NUMBER

KIRSCHSTEIN OTTINGER
ISRAEL & SCHIFFMILLER
551 FIFTH AVENUE
NEW YORK NY 10176-0024

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This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

03/19/96

DATE MAILED:

This application has been examined Responsive to communication filed on _____ This action is made final

A shortened statutory period for response to this action is set to expire 3 month(s), — days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. Notice of References Cited by Examiner, PTO-892.
2. Notice of Draftsman's Patent Drawing Review, PTO-948.
3. Notice of Art Cited by Applicant, PTO-1449.
4. Notice of Informal Patent Application, PTO-152.
5. Information on How to Effect Drawing Changes, PTO-1474.
6.

Part II SUMMARY OF ACTION

1. Claims 3-8 are pending in the application.

Of the above, claims _____ are withdrawn from consideration.

2. Claims 1-2 have been cancelled.

3. Claims _____ are allowed.

4. Claims 3-8 are rejected.

5. Claims _____ are objected to.

6. Claims _____ are subject to restriction or election requirement.

7. This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. Formal drawings are required in response to this Office action.

9. The corrected or substitute drawings have been received on 12/15/92. Under 37 C.F.R. 1.84 these drawings are acceptable; not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).

10. The proposed additional or substitute sheet(s) of drawings, filed on 12/15/92, has (have) been approved by the examiner; disapproved by the examiner (see explanation).

11. The proposed drawing correction, filed 12/15/92, has been approved; disapproved (see explanation).

12. Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has been received not been received been filed in parent application, serial no. 17990737; filed on 12/15/92.

13. Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. Other

Part III DETAILED ACTION

Drawings

1. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Specification

2. The disclosure is objected to because of the following informalities: (1) It is not clear what is meant by "the capacity would be less than CLOS at these rates", on page 4, line 6 (emphasis added). (2) Continuation information should be added on page 1 of the specification. (3) The top margin of page 3 of the preliminary amendment does not conform to the requirements of 37 CFR 1.52. Since there was practically no top margin on this page, the perforation caused some of the text on the top of the page to be lost; applicant is advised to submit a substitute sheet, with proper top margin, for page 3 of the preliminary amendment. (4) In the brief description of the drawings, Figure 6 is not listed as prior art as indicated in the drawings. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claims 3-8 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3-7 are incomplete since they depend from canceled claims 1 and 2.

In **claim 8**, the function of the rotating means is not clearly defined; from the claim language, it is understood that the rotating means is an element of the multiplex telecommunication switch, but not and element of the parallel data switching planes; it is therefore not clear what input port is cyclically connected by the rotating means to a multiplex time slot of the central switching unit. Moreover, it is not clear what is meant by "a multiplex time slot of the central switching unit".

Claim Rejections - 35 USC § 103

4. Claims 3-8 (as best understood) are rejected under 35 U.S.C. § 103 as being unpatentable over Takeuchi et al. (US Patent 5233603) in view of Beshai et al. (US Patent 5168492). Takeuchi et al. discloses a packet switch -Figure 8- comprising a plurality of switch units #1 to #P (parallel data switching planes) and an address controller 238 (control plane). Each switch unit has an equal number N of input ports (inputs to S/P's 1091 to 109N) and output ports (outputs of S/P's 1171 to 117N), and a central switch unit (bus 215 and FIFO's 2171 to 217N). See column 7, line 29 through column 10, line 39. Data is switched between the inputs and outputs of the packet switch in blocks of 8 bits (in octets) as indicated in column 8, lines 21-23. The reference however does not disclose that the packet switch is an STM switch (as in claim 8) and does not disclose the rotator means (as in claims 3-8). Beshai et al., in the same field of endeavor, discloses an ATM switch as shown in Figure 2, and suggests in column 6, lines 31-49, that the switch can be readily adapted to perform STM switching (see also Figure 5). Given that ATM switching is not well suited to handle synchronous traffic (delay sensitive traffic such as voice and video), it would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the ATM switch of Takeuchi et al. to STM switching, as suggested by Beshai et al., in order to accommodate synchronous

traffic. Beshai et al. also discloses rotators 20 and 20 connected to the inputs and outputs of a switch 18, as shown in Figure 2 (packet buffers 18 function as space switch; see column 4, lines 1-2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Takeuchi's switch so as to use rotators, as taught by Beshai et al., since Beshai et al. states in the abstract that using rotators has the advantages of reducing the switch hardware complexity and (in the ATM mode) eliminating arbitration. It would also have been obvious to one of ordinary skill in the art at the time the invention was made to use multistage rotators, since Beshai et al. further discloses that a multistage arrangement of rotators reduces the number of rotators required compared to that required for a square rotator arrangement (see column 7, lines 15-20).

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. Kizou whose telephone number is (703) 305-4744.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.



H. Kizou
Primary Examiner
G.A.U. 2603

March 17, 1996